

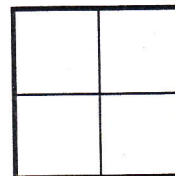
Name: _____ Date: _____

Predicting Heredity: *Reinforcement Activity*

To the student observer: Meet George and Gina Guinea Pig. They are expecting offspring very soon. See if you can use a Punnett square to predict the possible gene combinations of their offspring. George has two of the same genes for fur color. He is pure dominant for black fur. Gina has two of the same genes for white fur. She is pure recessive for white fur. George has the genotype *BB*, and Gina has the genotype *bb* for the trait. Use the Punnett square below, and determine possible gene combinations for their offspring.

Analyze:

1. How many gene combinations are there? _____
2. What is the genotype of their offspring? _____
3. What color will the offspring be? Why? _____



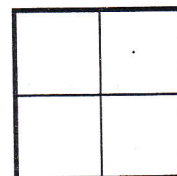
To the student observer: Meet Mr. and Mrs. Jones. Gary Jones has dark hair. He has two of the same genes for hair color. He is pure for dark hair coloring. His genotype is *DD* for hair color. Tina Jones has dark hair too. She has two different gene combinations. She has one dominant gene for dark hair and one recessive gene for blonde hair. She is a hybrid with the genotype *Dd*. Based on your knowledge of Punnett squares, what hair color will their children have?

Analyze:

1. What are the two genotype possibilities for hair color?

2. What percent or fraction of their children will be pure for dark hair?

3. What hair color will their children have? _____
4. If Gary and Tina were both hybrid darks for hair coloring, could they have a child with blonde hair? _____



Fill in the correct fractions below. The first one has been done for you.

- _____ $\frac{1}{4}$ would be pure dominant for hair color
 _____ would be pure recessive for hair color
 _____ would be hybrid

